L.—Notices of British Fungi. By the Rev. M. J. Berkeley, M.A., F.L.S.

[With Five Plates.]
[Continued from p. 365.]

HENDERSONIA.*

Perithecia intus strato prolifero sporas longas septatas edente vestita.

208. Hendersonia elegans. On culms of the common reed. Tansor, Norths. April, 1838. Forming little dark brown spots, in the centre of which is seated a single shining perithecium, the upper part of which causes a little projection above the surface. Perithecia lined with a gelatinous stratum, which gives rise to long broadly fusiform pedunculate colourless spores, with from 6—8 dissepiments. Articulations sometimes swollen, often quite even; each of the central ones containing a single large globose nucleus, with occasionally a few granules. Some of the spores are abortive.

This most interesting and well-characterized genus I have named after my friend Mr. J. Henderson, who has made many additions to the list of British Fungi, and who is a most indefatigable and accurate botanist. It is allied to the genus *Diplodia*, but is well distinguished by the more highly de-

veloped spores, which are colourless and pellucid.

Tab. XI. fig. 9. a, culm of reed with H. elegans, nat. size; b, a small portion of a horizontal section magnified; c, spores; d, nucleus; e, abortive spores, highly magnified.

209. Geaster fimbriatus, Fr. Syst. Myc. vol. iii. p. 16. Norfolk. Rev. R. B. Francis, whose plant was supposed at the time of the publication of the English Flora to be G. rufescens, a much more common species. A single specimen has also been found by Mr. Churchill Babington at Clifton, near Nottingham.

210. Lycoperdon saccatum, Schum., Fr. Syst. Myc. vol. iii. p. 35. In a boggy meadow at Hayes, Kent. Miss Read, from

whom I have an admirable drawing.

*211. Elaphomyces granulatus, Fr. Syst. Myc. vol. iii. p. 58. E. asperulus, Vitt. Mon. Tub. p. 69. t. 4. fig. 6. Vittadini has shown that this genus belongs to the same group as Tuber. I find the structure of the fruit in both our species to agree, except that in the present the sporidia are much larger. The central substance when young is tender and juicy, and consists

* Other species of this genus are included in Corda's Sporocadus = Diplodia + Hendersonia, &c.

The name Sporocadus, though appropriate to true Diplodiæ, cannot be used for the species now separated under the name of Hendersonia.

of filaments spotted with fertile patches. The filaments of the interstices are loose and but little complicated, whereas those of the fructifying spots are more closely packed, short and branched, their tips swelling and gradually giving rise to large globose utricles, which contain about four sporidia, and very much resembling those of Anthoceros, as represented by Mohl. Each sporidium has two membranes, and in the centre is a globose nucleus. While in the utricles the sporidia are far less coloured than after their escape. They appear to me to be perfected, when free, by the imbibition of the surrounding nutriment. The same I believe takes place in Bovista and Lycoperdon, and in many of the dark-coloured Hyphomycetes.

PLATE. XI. fig. 10. a, a filament from fertile patches which produce the utricles; b, a portion of one of the patches at a later stage of growth with utricles and sporidia; the sporidia in the utricles are still nearly colourless; c, a single sporidium of E. muricatus; d, ditto of E. granulatus. All highly magnified.

*212. E. muricatus, Fr. Syst. Myc. vol. iii. p. 59. E. variegatus, Vitt. l. c. p. 68. t. 4. fig. 4. Found with the last. This differs not only in the more muricated surface, but essentially in the substance of the coriaceous covering, being variegated with brown dots, and in the smaller size of the sporidia.

*213. Physarum hyalinum, Pers., Fr. Syst. Myc. vol. iii. p.

139. Lambley, Notts.

214. P. utriculare, Chev., Fr. l. c. On wood. King's Cliffe. 215. P. lilacinum, Fr. Syst. Myc. vol. iii. p. 140. The only specimen I have seen of this elegant species was found by my pupil Mr. Charles Wing, on the smooth bark of a fallen oak twig in Westhay Wood, King's Cliffe, Nov. 1838.

216. P. atrum, Fr. Syst. Myc. vol. iii. p. 147. On fallen oak branches, King's Cliffe. And a much smaller variety on cabbage stalks.

bbage stalks. 217. Stemonitis pulchella, Bab., Abst. Linn. Trans. 1839. Minutissima, hypothallo notabili fusco; peridiis sparsis evanidis; stipite breviusculo, deorsum incrassato, apicem non attingente; capillitio purpurascente ovato-oblongo vix ventricoso; sporidiis purpureo-fuscis. On Pteris aquilina, Barden Hill, Leic. Mr. Churchill Babington, Sept. 1837.

Extremely minute, not 1 line high, scattered with a transparent horn-brown hypothallus; peridium extremely evanescent; stem vanishing a little below the apex ,giving off filaments on every side; the free part rather short, smooth, dark, slightly incrassated below; capillitium ovato-oblong, purplish

brown; sporidia purple brown.

TAB. XII. fig. 11. a, S. pulchella, nat size; b, a single plant, magnified;

c, a portion of the capillitium with sporidia; d, appearance of the sporidia when dry. The two last highly magnified.

218. Trichia Neesiana, Corda, fasc. 2. f. 288. Apethorpe, Norths. My plant is certainly that of Corda, which is distinguished by the echinulate elaters; and it is also exactly the same as specimens from Mougeot in Sir W. J. Hooker's Herbarium, marked Trichia rubiformis, Fr. Whether Fries's plant is really distinct, I am unable to say. Corda figures it as having smooth elaters.

219. Onygena piligena, Fr. Syst. Myc. vol. iii. p. 208. On a piece of old flannel amongst larch trees in heathy ground.

Sherwood Forest, Notts.

220. Perisporium Arundinis, Desm.! exs. n. 329. On leaves

of reeds and their sheaths. Tansor, Norths. Spring.

221. Isaria puberula, n. s. Minuta, puberula, rubella; stipite recto; ramulis paucis simplicibus; apicibus clavatis. On

decayed flowers of dahlia. Apethorpe, Norths.

About 1 line high; stem straight, slender, with generally three short obtuse branchlets given off from the same point; occasionally the stem is forked, but in this case I have not seen the second division branched. The whole plant is of a reddish-gray hue, and is mealy, with little granules and flocci.

TAB. XII. fig. 12. a, I. puberula, nat. size; b, ditto, magnified.

222. Cephalotrichum curtum, n. s. Sparsum; capitulis subglobosis, æneo-fuscis; stipite brevi 1—2 septato fusco; floccis apicalibus, ramosis scabriusculis; sporis globosis. On leaves of Carices, both on the upper and under side, with Torula graminis, on the margin of a pond. Collyweston, Norths.

Extremely minute. Stem shore, brown, even, with 1—2 septa, very slightly thickened at the base; heads globose or sometimes broadly ovate, bronzy-brown; threads springing in a little tuft from the top of the stem, forked or ternate, with one or two short acute branchlets, slightly scabrous. Spores globose, with a small globose nucleus, smooth. Distinguished from C. macrocephalum by its smooth spores, articulated stem, and scattered habit, in which two latter points it differs also from C. rigescens. C. flavo-virens does not properly belong to the genus.

TAB. XII. fig. 13. a, C. curium, nat. size; b, a single plant magnified; c, ditto, more highly magnified, the greater part of the sporidia having been washed away; d, portion of one of the threads; e, sporidia with their nuclei.

223. Stilbum aurantiacum, Bab. in Abstr. of Linn. Soc. Trans. 1839. Subfasciculatum, aurantiacum; stipite glabro infra obscuriore; capitulo subclavato; sporidiis oblongis, ob-

tusis, subtruncatis. On an elm twig. Grace Dieu, Leic. Mr. Churchill Babington. Very near to the foreign S. lateritium and S. cinnabarinum, with which it forms a distinct group. It is less fasciculate than either, and is of a brighter colour. Receptacle composed of subdichotomous filaments, crowned with abortive sporidia, which are about one-third shorter than those which are perfect. Perfect sporidia oblong, obtuse, almost truncate.

TAB. XII. fig. 14. a, S. aurantiacum, nat. size; b, ditto, magnified; c, filaments of the receptacle which arise from the stem, with abortive spores; d, sporidia, both highly magnified.

224. Phycomyces nitens, Kze., Myc. heft 2. p. 113. t. 2. f. 9. Byssus olivaceus, Winch, Fl. Northumb. p. 121. in Trans. of Newcastle Nat. Hist. Soc. 1831. On the walls of an oil-cellar. Newcastle. Mr. Winch. I have been enabled to determine the above synonym by the assistance of Dr. Johnston, in whose collection, which has been kindly submitted to my

inspection, there is a specimen.

225. Mucor succosus, n. s. Minutissimus; hyphasmate spongioso; sporangiis minutissimis globosis flavis, dein olivaceis; columellà minutà. On the cut surface of stumps of Aucuba Japonica, which had been killed by frost. May, 1838. Apethorpe, Norths. Forming small pulvinate orange-ochre spongy masses, which, while there is an abundance of nutriment, do not fructify; but when gathered, produce a forest of exceedingly minute globose yellow sporangia, not indeed visible to the naked eye, which at length become olive. Columella very small, and little more than a slight swelling of the top of the stem.

Tab. XII. fig. 15. a, M. succosus, slightly magnified; b, threads from the barren plant; c, d, fertile flocci; e, sporidia; f, granules and an abortive sporangium from the barren plant, more or less highly magnified.

226. Sporocybe nigrella, n. s. Minutissima, nigra, stipite simplice, tenuissimo, articulato; sporidiis globosis glabris. On dead leaves of grass. King's Cliffe, Leicestershire. Mr. Churchill Babington. Extremely minute, not one-fourth of a line high, dark black. Stem slender, with 4—5 articulations; heads globose; sporidia globose, smooth, with a globose nucleus. The whole plant is dark, so that it requires a good light to see the articulations of the stem, which are, however, very evident. It is very near to Periconia atra, Corda; but the stem of that species is figured as closely annulated, a structure quite at variance with that of the present species; and the sporidia appear to be less transparent. I suspect that under a very superior microscope they would appear very minutely scabrous, but I am not certain whether this is the case; and Ann. & Mag. N. Hist. Vol. vi. 2 F

perhaps it may be the same with Cephalotrichum curtum; but under a magnifier of 600 diameters I cannot see this clearly enough to make it part of the specific character.

TAB. XIII. fig. 16. a, S. nigrella, nat. size; b, c, single plants; d, sporidia,

highly magnified.

*227. Sporocybe alternata. Aspergillus alternatus, Berk., Ann. of Nat. Hist., vol. i. p. 262. This species, on more mature reflection, certainly belongs to the genus Sporocybe, as the sporidia are not arranged in moniliform threads.

228. Sporocybe lobulata, n. s. Atra, filis proliferè ramosis; ramulis subalternis attenuatis; apicibus 4—5 lobulatis; sporidiis ellipticis, echinatis lævigatisque, binucleatis. On a

coarse linen cloth on a heap of rubbish. King's Cliffe.

From the articulated creeping mycelium spring slender very minutely scabrous threads, branched proliferously; ramuli often alternate, attenuated, their apices swelling into a pyriform 4—5-lobed receptacle, from which spring elliptic sporidia, some of which are echinulate, others smooth with two nuclei.

Nearly allied to the last, but it is at once distinguished by the lobed tips of the branchlets. It appears also to have a great resemblance to Stachybotrys atra, Corda, but the lobes are not so distinct; neither are they mammillate, and the sporidia have no true septum. There is a species of Periconia (= Sporocybe, Fr.), figured by Corda, with a lobed receptacle, but very different in other respects.

TAB, XIII. fig. 17. a, Portion of S. lobulata; b, a portion of one of the threads; c, one of the lobed tips; d, sporidia: all highly magnified.

229. Helicosporium vegetum, Nees. Syst. p. 68. f. 69. On decayed oak branches. Morehay Lawn, in Rockingham Fo-

rest, Norths.

*230. Helminthosporium Tiliæ, Fr. Syst. Myc. vol. 3. p. 361. Dr. Greville's figure does not give a good notion of this plant, which is certainly an Helminthosporium. Besides the filiform and clavate flocci, there are distinct oblong biseptate sporidia, supported by a minute peduncle.

TAB. XIII. fig. 18. a, flocci; b, sporidia: highly magnified.

231. H. foliculatum, Corda, Ic. fasc. 1. t. 3. fig. 180. On stems of umbelliferous plants and cabbage-stalks. King's Cliffe.

232. H. obovatum, n. s. Floccis subulatis, multi-articulatis, subæqualibus; sporidiis obovatis, fuscis, biseptatis. On old

planks exposed to wet.

Forming a short dense velvety-black stratum; flocci very slightly attenuated, subulate, either nearly straight or slightly flexuous. Sporidia broadly obovate, with two dissepiments,

which divide them into three very unequal articulations. This species is clearly new, differing from all in the very remarkable form of its sporidia.

TAB. XIII. fig. 19. a, H. obovatum, nat. size; b, flocci and sporidia; c, a single sporidium, very highly magnified.

233. H. delicatulum, n. s. Tenuissimum; filis subulatis multi-articulatis; sporidiis oblongis, obtusis, 4—5-septatis, pellucidis; articulis interdum septo verticali instructis. On stems of umbelliferæ. King's Cliffe.

Forming very delicate soft patches of scattered filaments, presenting to the naked eye a cloudy black spot. Flocci very slender, subulate, multi-articulate, brown, paler at the tips. Sporidia nearly colourless, oblong, with the apices very obtuse, consisting of about five swollen articulations, one or two of which have occasionally a vertical dissepiment.

Tab. XIII. fig. 20. a, H. delicatulum, nat. size; b, flocci and sporidia; c, a portion of one of the flocci; d, sporidia. All more or less highly magnified.

*234. Dematium hispidulum, Fr. Syst. Myc. vol. iii. p. 366. Sporodum conopleoides, Corda, fasc. iii. tab. 1. fig. 22. On dead grasses. Common. An excellent figure of this plant is given by Corda under the name quoted above, but he does not refer to Dematium hispidulum. From the middle of the flocci spring one or two obovate joints, which support two or three rows of sporidia, of which those at the apices are the largest. We have, therefore, something like the structure of Penicillium, but the plant belongs to a different series, and the genus of Corda is probably a good one. It is quite certain that Fries's genus Dematium, as it at present stands, cannot be retained, but it is well to be cautious about making new genera, where the affinities are obscure, and till all the species, or at least the greater part of them, have been correctly observed.

235. Macrosporium concinnum, n. s. Helminthosporium striæforme, Corda, fasc. 1. p. 13. Maculis pulverulento-velutinis, nigris; floccis flexuosis, articulatis, fuscis; sporidiis obovatis, pedicillatis, demum oblongis. On the decorticated twigs of an old hamper made of some species of ozier. Ape-

thorpe, Sept. 1840.

Spots elongated black. Flocci minute waved, brown below, pellucid above, often with the rudiment of a branch at the apex. Sporidia obovate, with about three principal dissepiments, which are divided vertically or obliquely; furnished with a very short pellucid peduncle. This peduncle at length vanishes, and they lose their obovate form and become oblong.

TAB. XII. fig. 21. a, M. concinnum, nat. size; b, flocci and sporidia; c, a sporidium germinating; d, sporidia in various stages of growth. All more or less magnified.

*236. Arthrinium Puccinioides, Kz., Myc. heft 2. p. 103. Torula Eriophori, Berk. Eng. Fl. vol. v. part 2. p. 309. An inspection of my plant with higher magnifying powers than I possessed at the time of the publication of the concluding volume of the 'English Flora,' shows that it is certainly that cited above, and exactly agreeing with Desmazières' published specimens. In neither are the sporidia very distinctly angular, and by no means in so high a degree as Corda represents them. They are nearly of the shape of two cones placed base to base, which gives them an angular outline. I find them as

Corda does, attached in whorls, at the dissepiments.

237. Aspergillus aurantiacus, n. s. Næmatogonum aurantiacum, Desm.! Ann. d. Sc. Nat. n. s. vol. ii. tab. 2. fig. 1. On elm bark. Apethorpe, Norths. Having found this very curious production in every stage of growth, I am enabled to state that it is certainly a true Aspergillus, very nearly allied to A. aureus. When in perfection the threads are simple, and the sporidia attached in moniliform rows to a larger one at their base. It has, however, a great tendency to become proliferous, especially when it has been beaten down by the weather; in which case new threads proceed from the swollen receptacles, forming a more or less intricate mass. In one instance I saw a few short spicules on one of the receptacles, marking, I suppose, the situation of the chains of sporidia.

TAB. XIII. fig. 22. A. aurantiacus, highly magnified.

*238. Botrytis lateritia, Fr. Syst. Myc. vol. iii. p. 402. In an early stage of growth the sporidia are contained in a large globose sporangium; it accords therefore with Stachylidium rather than Botrytis. Botrytis allochroa is probably the same thing, as is also apparently Acrostalagmus parasitans, Corda.

239. Botrytis destructor, n. s. Grisea, sparso-effusa; floccis vix septatis erectis, ramis alternis, ultimis furcatis, uncinatis et divaricatis; sporidiis obovatis basi valde attenuatâ. On the leaves of various species of Allium. Spring. Very common and destructive in some years, preventing the plants which are attacked from coming to perfection. The individual threads are distinct, but form large patches on the leaves, or even entirely cover them. Flocci erect, not septate, branched alternately; ultimate ramuli forked and uncinate, or divaricate. Sporidia seated on the tips of the ultimate ramuli. Nearly allied to B. parasitica, of which there are many forms or allied species, but distinguished easily from all by the peculiar shape of the sporidia.

TAB. XIII. fig. 23. a, a plant of B. destructor; c, portions of ditto; b, spores. All more or less magnified.

*240. B. terrestris, Pers., Myc. Eur. 1. p. 38. Stachylidium terrestre, Fr. Syst. Myc. vol. iii. p. 391. The sporidia are seated singly on the tips of the ramuli, the plant therefore is not a true Stachylidium.

TAB. XIV. fig. 24. B. terrestris, highly magnified.

241. Penicillium subtile, n. s. Minutissimum, niveum; hyphasmate serpente, tenuissimo; floccis fertilibus erectis, simplicibus vel ternatis; catenis sporidiorum lato-ellipticorum paucis. Clothing the inside of an old willow. Tansor, Norths. Spring.

Extremely minute and delicate, presenting to the naked eye nothing more than a white mealy bloom. Hyphasma creeping; fertile threads mostly simple but sometimes ternate, giving off a few chains of rather large broadly elliptic sporidia,

each furnished at either end with a little apiculus.

Very distinct in the form and size of the sporidia from any with which it might be confounded.

TAB. XIV. fig. 25. a, threads of P. subtile; b, two sporidia. Both more or less highly magnified.

242. Dactylium obovatum, n. s. Candidum, pulvinulatum; floccis tenuissimis simplicibus; sporidiis obovatis apicalibus subbinis obovatis uniseptatis. On twigs of willow in a damp place. King's Cliffe. Forming minute white tufts springing up about the ostiola of some Sphæria. Flocci erect, simple, not articulated, at least as far as I have observed, bearing at their apices one or two broadly obovate uniseptate shortly pedicellate sporidia.

This differs from *Dactylium roseum* (*Trichothecium roseum*, Auct.) in its sporidia not being constricted, and the absence of

any tint of rose-colour.

Trichothecium roseum is certainly a Dactylium. Nothing can be more unnatural than to make it a Puccinia, as Corda has done; with which genus it has scarcely any affinity.

Tab. XIV. fig. 26. a, tuft of D. obovatum, magnified; b, flocci and sporidia; c, sporidia. Both more or less highly magnified.

243. Dactylium sphærocephalum, n. s. Album; hyphasmate tenui, decumbente; floccis fertilibus erectis, suprà plus minus ternatis; capitulis subglobosis 10—12 sporis; sporidiis oblongis brevissimè pedicellatis 3-septatis. On dead twigs of ivy. Lambley, Notts.

Forming a thin white stratum, with the heads visible to the naked eye. Hyphasma decumbent, branched, articulated; fertile flocci erect, articulated, naked below, above branched in a more or less ternate manner; branchlets slightly swollen

at the base, attenuated above. Sporidia forming subglobose heads attached by very short peduncles, oblongo-elliptic, tri-

septate.

A most elegant species, to which the figure does not do justice. It is white in every stage of growth, by which it is distinguished, and by the large heads of distinctly septate sporidia.

Tab. XIV. fig. 27. a, Dactylium sphærocephalum, nat. size; b, tuft of ditto, magnified; c, a sporidium highly magnified.

*244. Oidium leucoconium, Desm.! Fr. Syst. Myc. vol. iii. p. 432. This species, O. erysiphoides and O. monilioides, are, I have no doubt, the early stages of various species of Erysiphe.

245. Fusisporium udum, n. s. Late effusum, tremellinum; sordidè aurantiacum; floccis hyphasmatis decumbentibus, parcè ramosis; sporidiis longis, curvulis, 3—5 septatis, utrin-

que acutis. On trees in spring. King's Cliffe.

Forming a broad tremelloid mass wet with the overflowing sap, composed of slightly branched decumbent filaments, some of which are closely septate, others contain a series of globose nuclei, while others are quite simple. Sporidia 3—5 septate elongated curved, acute at either end, the contents of the articulations orange. In age the septa are absorbed, and there is a row of irregular nuclei.

TAB. XIV. fig. 28. a, flocci and sporidia, magnified; b, sporidia, highly magnified.

246. F. Betæ, Desm.! exs. n. 305. Ann. d. Sc. Nat. vol. xix. tab. 18. On beet root. Apethorpe.

247. F. Georginæ, Kl.! exs. n. 186. On roots of dahlia.

Apethorpe.

248. F. album, Desm.! n. 929. On dry but green leaves of the oak. Milton, Norths. Moug. and Nest. n. 894. is this species, and not the true F. griseum of Greville.

249. Fusarium lateritium, Nees, Fr. Syst. Myc. vol. iii. p. 470. On Sophora Japonica. Milton. Mr. Henderson. On

willow, King's Cliffe. On lime, Burleigh, Norths.

*250. Melanconium bicolor, Nees, Fr. Syst. Myc. vol. iii. p. 488. Didymosporium elevatum is certainly only a form of this species. In Fries's specimens in Scler. Suec. the sporidia are not didymous, neither are they in Dr. Greville's plant. More modern microscopes show clearly that the supposed septum arose from an optical deception caused by the presence of the nucleus. The plant again of Carmichael, referred to M. sphæroideum, Lk., is a form of the same species.

251. M. sphærospermum, Lk., Fr. Syst. Myc. vol. iii. p. 489.

On reeds. Tansor, Norths. At present I have found only a

very few specimens.

252. Torula Plantaginis, Corda, Ic. fasc. 3. tab. 1. f. 14. On leaves of Plantains. Stibbington, Hunts., 1828. I find exactly the same barren creeping threads of a perfectly distinct structure from the torulose threads as Corda. I suspect that further observations will show that this fungus has distinct sporidia. At present, however, it must remain in the genus Torula.

253. Puccinia Galiorum, Lk., Sp. vol. ii. p. 76. Dr. John-

ston finds a beautiful variety on Asperula odorata.

254. Æcidium Pedicularis, Loboschutz. Cæoma Pediculariatum, Lk., Sp. vol. ii. p. 47. Near Berwick. Dr. Johnston, Sept. 1839. Only a very few specimens of this interesting species occurred.

255. Æ. Asperifolii, Pers. Syn. p. 208. On Boraginæ.

Berwicks., Dr. Johnston.

256. Uredo hypodytes, Schlecht., Kl.! exs. 83. Spittal Links. Berwicks., Dr. Johnston, who informs me that he has in vain looked for specimens this year, though it was very abundant when he first met with it.

LI.—Notes on British Char, Salmo Umbla, Linn., S. Salvelinus, Don. By Wm. Thompson, Vice-Pres. Nat. Hist. Society of Belfast.

HAVING within the last few years, through the kindness of friends and correspondents, been favoured with specimens of Char from various localities in the British Islands, I shall here

give some notes made upon them.

It may first be mentioned, that so late as the years 1835 and 1836, when the excellent volumes of Mr. Jenyns and Mr. Yarrell appeared, neither author had seen any Char from Ireland* or Scotland, and the original observations contained in their respective works were necessarily limited to examples of the fish from the lakes of England and Wales. In the Edinburgh Philosophical Journal for January 1835 (vol. xviii. p. 58), Sir Wm. Jardine noticed the Salmo alpinus as taken by his party in Sutherlandshire.

* When I supplied Mr. Yarrell with the published localities in Ireland for the Char, as noticed in his work, I had not seen any native examples of the species. In the Supplement to his 'British Fishes' (1839, p. 27), this author has offered a few remarks on Char sent him by Lord Cole from Loughs Eask and Melvin in Ireland—these are considered to be examples of the S. Umbla, Linn., and S. Salvelinus, Don.